CLASSIFIED MESSAGE

SECRET

DATE : 00 36Z 19 FEB

NRO REVIEW COMPLETED

TO : DIRECTOR

25X1A FROM : [redacted] contd

ACTION : DPD (1,2,3,4,5,6,7,8,9,10)

INFO : S/C (11)

VL

TOR: 0210Z 19 FEB 00

IN 18291

PRIORITY

25X1A TO [redacted] INFO

CIRCULATE | INITIAL
X-FILE | [redacted] 0017

NO NIGHT ACTION

ARGON

25X1A TO: [redacted]

SUBJECT: DUST FREE AREA-ANALYSIS TO DATE

1. SINCE OUR LAST DISCUSSIONS CONSIDERABLE DATA HAS BEEN COLLECTED FROM VARIOUS SOURCES REGARDING THE FEASIBILITY, PRACTICALITY AND REQUIREMENTS REGARDING A CLEAN ROOM AT NEW YORK [redacted] AND VAFB. NRO 25X1

2. AS A RESULT OF THE ANALYSIS MADE TO DATE IT IS RECOMMENDED THAT ONE OF THE FOLLOWING ALTERNATES BE APPROVED.

ALTERNATE A.

INSTALLATION OF CLEAN ROOMS AS FOLLOWS:
SIZE:

1. 16 X 24 AT NEW YORK FOR FINAL CHECKOUT.

2. 25 X 25 AT PALO ALTO FOR SYSTEM CHECKS INCLUDING COLLIMATORS.

3. 25 X 25 AT VAFB FOR FINAL SYSTEM CHECKOUT INCLUDING COLLIMATORS AND FILM LOADING AREAS FOR MAB, PAD RUNS AND FLIGHT.

CONTROL:

SECRET

25X1A [redacted] 0017 (IN 18291)

AS REPORTED BY THE BAKER COMPANY IN CERTIFIED REPORTS AS CLEAN TO A 2.0 MICRON LEVEL.

DELIVERY:

ESTIMATED BY FCI AS 12 TO 14 WEEKS FROM PURCHASE ORDER.

COST: ESTIMATED ROM

25X1A [redacted] FCI

25X1 NRO [redacted] VAFB

PLUS [redacted] LMSD (MAN-HOURS)

PLUS 6 DAYS/UNIT DELAY IN FLIGHT SCHEDULE

PLUS [redacted] MISC

25X1A SUBTOTAL [redacted]

ALTERNATE B.

INSTALLATION OF ONE CLEAN ROOM AT VAFB.

SIZE:

25 X 30 AT VAFB FOR FINAL ASSEMBLY, CLEANING OF INTERIOR FINAL CHECKOUT INCLUDING COLLIMATORS AND FILM LOADING AREA FOR MAB, PAD RUNS AND FLIGHT.

CONTROL: (AS ABOVE (2.0 MICRONS)).

DELIVERY: ESTIMATED 14 WEEKS WITH HQS TRANSPORTATION FROM MAINE.

25X1A [redacted] 0017 (IN 18291) PAGE - 3-

COST: ESTIMATED ROM

25X1A [redacted] VAFB

PLUS 20,000 LMSD (MAN-HOURS)

25X1A TOTAL: [redacted]

SIZE:

25 X 25 AT PALO ALTO FOR SYSTEMS CHECKOUT INCLUDING COLLIMATORS.

CONTROL: CONTROLLED ATMOSPHERE INCLUDING ELECTROSTATIC PRECIPATATOR AND POSITIVE PRESSURE. (NO VALUE OF PARTICLE SIZE AVAILABLE AT PRESENT).

DELIVERY: 10-12 WEEKS.

NRO 25X1 COST: ESTIMATED ROM

25X1A [redacted] [redacted] MISC

3. AS YOU CAN SEE FROM THE EXPECTED DELIVERY AND INSTALLATION AT ALL INSTALLATIONS AN IMMEDIATE GO-AHEAD IS REQUIRED TO INSURE COMPLETION BETWEEN NOW AND THE TIME NEW YORK EXPECTS TO DELIVER. IT WILL ONLY BE A MATTER OF A FEW DAYS AT THE MOST WHEN THE CLEAN

NRO 25X1 ROOM AT [redacted] PALO ALTO WILL BE REQUIRED AND APPROXIMATELY 25 TO 30 DAYS LATER THE VAFB CLEAN ROOM WOULD BE REQUIRED.

4. DURING THE ANALYSIS OF THIS REQUIREMENT THE FOLLOWING FACTS HAVE BEEN CONSIDERED IN THIS DECISION.

(1) DUST PARTICLES ARE ELECTROSTATICALLY ATTRACTED TO THE FILM DURING TRANSPORT THRU THE CAMERA. THIS IS PREDOMINANT AT THE POINT

25X1A

THE FILM LEAVES THE SUPPLY SPOOL. UPON REACHING THE PRECISION FLAT PLATEN AND BEING LODGED BETWEEN THE FILM AND PLATEN DURING DIFFERENTIAL PRESSURE FLATTENING AN UNDETERMINABLE AMOUNT OF DISTORTION IS INTRODUCED INTO THE PHOTOGRAPHIC IMAGE. THIS AMOUNT OF DISTORTION VARIES WITH PARTICLE SIZE AND LOCATION ON THE FORMAT (10 MICRON PARTICLE INTRODUCES 10 MICRON DISTORTION AT 45 DEGREES OFF AXIS AND LESS DISTORTION AS THE LOCATION APPROACHES THE AXIS).

(2) NO KNOWN PRECISION CAMERA MANUFACTURER HAS BEEN SPECIFICALLY CONCERNED WITH THIS PROBLEM BEFORE. THIS MAY BE EXPLAINED USING SEVERAL THEORIES NOT CONSIDERED APPROPRIATE HERE.

(3) LMSD PROPOSES THAT AS A MINIMUM EFFORT THE PHILOSPHY OF THE CLOSER WE APPROACH LAUNCH DATE AND LOCATION THE MORE CONTROL MUST BE APPLIED TO HANDLING INSTRUMENT IN A DUST FREE ENVIRONMENT.

(4) CONSIDERATION BY AUTOMETRICS AS OBTAINED BY DIRECTION FROM [redacted] IS AS FOLLOWS:

25X1A

A. THE DUST PROBLEM IS STRAIGHTFORWARD AND DISTORTION-WISE THERE WILL BE DAMAGE TO THE SYSTEM (ALONG THE LINES OF PARAGRAPH 4 (1) ABOVE).

B. A SPECIFIC OPERATIONAL TASK SHOULD BE FOLLOWED TO TRY TO CLEAN INSTRUMENT BEFORE FLIGHT.

C. STATISTICAL ANALYSIS OF HOW MUCH DUST CAN BE TOLERATED WOULD BE VERY DIFFICULT.

D. IN ORBIT, THE FIRST FEW FRAMES OF PHOTOGRAPHY MAY REMOVE FROM THE FILM PATH AREA ANY LOOSE PARTICLES AND BECOME CONSTANT AFTER THAT. IT MAY BE POSSIBLE THEN TO DETECT
THIS CONSTANT AS DISTORTION AND INFO USED AS SYSTEMATIC ERROR.

E. AGREE THAT THE CLOSER TO LAUNCH (INCLUDING THE FINAL FILM LOADING) THE MORE CARE MUST BE EXERCISED IN CLEANLINESS.

5. REQUEST ACTION BY 22 FEBRUARY TO INITIATE PURCHASE ORDERS.

END OF MESSAGE